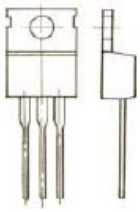
JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

TO-220 Plastic-Encapsulate MOSFETS

CJP75N80 N-Channel Power MOSFET

TO-220

1. GATE
2. DRAIN
3. SOURCE



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General Description

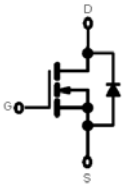
The CJ75N80 uses advanced trench technology and design to Provide excellent $R_{DS(on)}$ with low gate charge. Good stability and uniformity with high E_{AS} .This device is suitable for use in PWM, load switching and general purpose applications.

FEATURE

- Advanced trench process technology
- Special designed for convertors and power controls
- High density cell design for ultra low $R_{DS(on)}$
- Fully characterized avalanche voltage and current
- Fast switching
- Avalanche energy 100% test

APPLICATIONS

- Power switching application
- Hard switched and high frequency circuits
- Uninterruptible power supply



Maximum ratings (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source voltage	V_{DSS}	75	V
Gate-Source Voltage	V_{GS}	±25	
Drain Current(DC) at T_C=25℃	$I_{D(DC)}$	80	A
Drain Current-Continuous @Current-Pulsed(note1)	$I_{DM(pulse)}$	320	
Power Dissipation (note 3, T_a=25℃)	P_D	2	W
Maximum Power Dissipation (note 4, T_c=25℃)		160	W
Single Pulsed Avalanche Energy(note2)	E_{AS}	580	mJ
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	62.5	℃/W
Storage Temperature	T_j	175	℃
Junction Temperature	T_{stg}	-55 ~+175	

Notes 1. Repetitive Rating: Pulse width limited by maximum junction temperature

2. E_{AS} condition: T_j=25℃ , V_{DD}=37.5V,V_G=10V,L=0.5mH,I_D=20A

3. This test is performed with no heat sink at T_a=25℃

4. This test is performed with infinite heat sink at T_c=25℃

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Electrical characteristics (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
On/Off States						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS} = 0V, I_D =250μA	75			V
Gate-Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	2.0	2.85	4.0	
Gate-Body Leakage Current	I_{GSS}	V_{DS} =0V, V_{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current(T_C=25℃)	I_{DSS}	V_{DS} =75V, V_{GS} =0V			1	μA
Zero Gate Voltage Drain Current(T_C=125℃)					10	
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =40A			10	mΩ
Dynamic characteristics						
Forward Transconductance	g_{FS}	V_{DS} =5V, I_D =30A		60		S
Input Capacitance (note2)	C_{iss}	V_{DS} =25V,V_{GS} =0V,f =1MHz		3100		pF
Output Capacitance (note2)	C_{oss}			310		
Reverse Transfer Capacitance (note2)	C_{rss}			260		
Total Gate Charge	Q_g	V_{DS} =30V,V_{GS} =10V,I_D =30A		100		nC
Gate-Source Charge	Q_{gs}			18		
Gate-Drain Charge	Q_{gd}			27		
Switching times (note2)						
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=30V, R_L=15Ω, I_D=2A, V_{GS}=10V,R_G=2.5Ω		18.2		nS
Rise Time	t_r			15.6		
Turn-Off Delay Time	$t_{d(off)}$			70.5		
Fall Time	t_f			13.8		
Source-Drain Diode characteristics						
Source-Drain Current(Body Diode)	I_{SD}				80	A
Pulsed Source-Drain Current(Body Diode)	I_{SDM}				320	
Forward on Voltage	V_{SD}	V_{GS} =0V, I_{SD}=40A, T_j=25℃			1.2	V
Reverse Recovery Time (note1)	t_{rr}	I_F=75A, T_j=25℃,di/dt=100A/μs			53	nS
Reverse Recovery Charge (note1)	Q_{rr}				105	nC
Forward Turn-on Time	$t_{(on)}$	Intrinsic turn-on time is negligible(turn-on dominated by L_S+L_D)				

Notes:

1. Pulse Test : Pulse Width≤300μs, duty cycle ≤1.5%,R_G=25Ω,Starting T_j=25℃
2. These parameters have no way to verify.